

U.S. SERIAL NO: 07/867, 819

FILED: April 13, 1992

AMENDMENT

Clean Copy of Claims as Amended

1. (four times amended) A peptide forming a linear epitope for a human autoantibody selected from the group of peptides of less than forty amino acids, wherein the sequence of the epitope begins with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (SEQ ID NO:37), 37, LCFGSEGGT (SEQ ID NO:38), 38, CFGSEGGT (amino acids 2-9 of SEQ ID NO:38), 41, SEGGTYYIKEQ (SEQ ID NO:39), 42, EGGTYYIKEQ (amino acids 2-11 of SEQ ID NO:39), 44, GTYYIKEQ (amino acids 4-11 of SEQ ID NO:39), 44, GTYYI (amino acids 4-8 of SEQ ID NO:39), 76, EIKSFSQEGRT (SEQ ID NO:40), 78, KSFSQEGR (amino acids 3-10 of SEQ ID NO:40), 81, SQEGRTTKQ (SEQ ID NO:41), 84, GRTTKQEPM (SEQ ID NO:42), 106, STKQAAFKAV (amino acids 2-11 of SEQ ID NO:43), 105, ISTKQAAFKAVS (SEQ ID NO:43), 108, KQAAFKAV (amino acids 4-11 of SEQ ID NO:43), 111, AFKAVSEVC (SEQ ID NO:44), 126, FTFIQFKKDLKESMK (SEQ ID NO:45), 130, QFKKDLKE (amino acids 5-12 of SEQ ID NO:45), 138, SMKCGMWGRA (SEQ ID NO:46), 139, MKCGMWGRA (amino acids 2-10 of SEQ ID NO:46), 142, GMWGRALRKAIA (SEQ ID NO:47), 145, GRALRKAI (amino acids 4-11 of SEQ ID NO:47), 165, ALAVTKYKQRNGWSHKDLLRLSH (SEQ ID NO:48), 169, TKYKQRNG (amino acids 5-12 of SEQ ID NO:48), 173, QRNGWSHK (amino acids 9-16 of SEQ ID NO:48), 182, LLRLSHLKPS (SEQ ID NO:49), 184, RLSHLKPS (amino acids 3-10 of SEQ ID NO:49), 199, TKYITKGW (amino acids 3-10 of SEQ ID NO:71), 202, ITKGWKEV (amino acids 6-13 of SEQ ID NO:71), 210, HELYKEKA (SEQ ID NO:50), 212, LYKEKALSV (SEQ ID NO:51), 216, KALSVETEKLLKYL (SEQ ID NO:52), 222, TEKLLKYL (amino acids

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7-14 of SEQ ID NO:52), 224, KLLKYLEA (SEQ ID NO:53), 229, LEAVEVKVKRTKDE (SEQ ID NO:54), 234, KVVKRTKDE (amino acids 6-13 of SEQ ID NO:54), 257, HLLTNHLKSKEVWKALLQEMPL (SEQ ID NO:55), 263, LKSKEVWK (amino acids 7-14 of SEQ ID NO:55), 264, KSKEVWK (amino acids 8-15 of SEQ ID NO:55), 265, SKEVWK (amino acids 9-14 of SEQ ID NO:55), 280 ALLRNLGKMTA (SEQ ID NO:56), 283, RNGLGKMT (amino acids 4-10 of SEQ ID NO:56), 285, LGKMTANS (SEQ ID NO:57), 308, LCNEKLLKKARIHPFHI (SEQ ID NO:58), 313, LLKKARI (amino acids 6-12 of SEQ ID NO:58), 315, KKARIHPF (amino acids 8-15 of SEQ ID NO:58), 330, TYKTGHGLRGKLKWRPDE (SEQ ID NO:59), 331, YKTGHGL (amino acids 2-8 of SEQ ID NO:59), 352, ALDAAFYK (SEQ ID NO:60), 355, AAFYKTFKTVEPTGKRFLLA (SEQ ID NO:61), 379, ASMNQRVLGS (SEQ ID NO:62), 365, EPTGKRFL (amino acids 11-18 of SEQ ID NO:61), 398, AMCMVVTR (SEQ ID NO:63), 414, AFSDEMVP (SEQ ID NO:64), 420, VPCPVTTD (SEQ ID NO:65), 433, VLMAMMSQI (SEQ ID NO:66), 445, TDCSLPMI (SEQ ID NO:67), 449, LPMIWAQKTNTPA (amino acids 3-15 of SEQ ID NO:68), 472, TFAGGVHPAI (SEQ ID NO:69), 472, TFAGGVHP (amino acids 1-8 of SEQ ID NO:69), 481, IALREYRKKMDIPAKL (SEQ ID NO:70), 484, REYRKKMD (amino acids 4-11 of SEQ ID NO:70).

2. (twice amended) A peptide of claim 1 consisting of between four and twenty five amino acids.

3. (twice amended) A peptide of claim 2 reactive with anti-Ro/SSA polyclonal antibodies.

4. (twice amended) A peptide of claim 1 labelled with a compound selected

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from the group consisting of dyes, fluorescent labels, chemiluminescent labels, enzymes, and radioactive labels.

11. (twice amended) A peptide of claim 1 immobilized onto a substrate.

612. (five times amended) A method for screening patients for autoantibodies to Ro/SSA comprising reacting a biological sample with a peptide forming a linear epitope selected from the group of peptides of less than forty amino acids, beginning with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of the Ro/SSA epitopes: 30, MNRLHRFL (SEQ ID NO:37), 37, LCFGSEGGT (SEQ ID NO:38), 38, CFGSEGGT (amino acids 2-9 of SEQ ID NO:38), 41, SEGGTYYIKEQ (SEQ ID NO:39), 42, EGGTYYIKEQ (amino acids 2-11 of SEQ ID NO:39), 44, GTYYIKEQ (amino acids 4-11 of SEQ ID NO:39), 44, GTYYI (amino acids 4-8 of SEQ ID NO:39), 76, EIKSFSQEGRT (SEQ ID NO:40), 78, KSFSQEGR (amino acids 3-10 of SEQ ID NO:40), 81, SQEGRTTKQ (SEQ ID NO:41), 84, GRTTKQEPM (SEQ ID NO:42), 106, STKQAAFKAV (amino acids 2-11 of SEQ ID NO:43), 105, ISTKQAAFKAVS (SEQ ID NO:43), 108, KQAAFKAV (amino acids 4-11 of SEQ ID NO:43), 111, AFKAVSEVC (SEQ ID NO:44), 126, FTFIQFKKDLKESMK (SEQ ID NO:45), 130, QFKKDLKE (amino acids 5-12 of SEQ ID NO:45), 138, SMKCGMWGRA (SEQ ID NO:46), 139, MKCGMWGRA (amino acids 2-10 of SEQ ID NO:46), 142, GMWGRALRKAIA (SEQ ID NO:47), 145, GRALRKAI (amino acids 4-11 of SEQ ID NO:47), 165, ALAVTKYKQRNGWSHKDLLRLSH (SEQ ID NO:48), 169, TKYKQRNG (amino acids 5-12 of SEQ ID NO:48), 173, QRNGWSHK (amino acids 9-16 of SEQ ID NO:48), 182, LLRLSHLKPSS (SEQ ID NO:49), 184, RLSHLKPS (amino acids 3-10 of SEQ ID NO:49), 199, TKYITKGW (amino acids 3-10 of SEQ ID NO:71), 202, ITKGWKEV

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(amino acids 6-13 of SEQ ID NO:71), 210, HELYKEKA (SEQ ID NO:50), 212, LYKEKALSV (SEQ ID NO:51), 216, KALSVETEKLLKYL (SEQ ID NO:52), 222, TEKLLKYL (amino acids 7-14 of SEQ ID NO:52), 224, KLLKYLEA (SEQ ID NO:53), 229, LEAVEVKVKRTKDE (SEQ ID NO:54), 234, KVKRTKDE (amino acids 6-13 of SEQ ID NO:54), 257, HLLTNHLKSKEVWKALLQEMPL (SEQ ID NO:55), 263, LKSKEVWK (amino acids 7-14 of SEQ ID NO:55), 264, KSKEVWK (amino acids 8-15 of SEQ ID NO:55), 265, SKEVWK (amino acids 9-14 of SEQ ID NO:55), 280 ALLRNLGKMTA (SEQ ID NO:56), 283, RNLGKMT (amino acids 4-10 of SEQ ID NO:56), 285, LGKMTANS (SEQ ID NO:57), 308, LCNEKLLKKARIHPFHI (SEQ ID NO:58), 313, LLKKARI (amino acids 6-12 of SEQ ID NO:58), 315, KKARIHPF (amino acids 8-15 of SEQ ID NO:58), 330, TYKTGHGLRGKLWWRPDE (SEQ ID NO:59), 331, YKTGHGL (amino acids 2-8 of SEQ ID NO:59), 352, ALDAAFYK (SEQ ID NO:60), 355, AAFYKTFKTVPTGKRFLLA (SEQ ID NO:61), 379, ASMNQRVLGS (SEQ ID NO:62), 365, EPTGKRFL (amino acids 11-18 of SEQ ID NO:61), 398, AMCMVVTR (SEQ ID NO:63), 414, AFSDEMVP (SEQ ID NO:64), 420, VPCPVTTD (SEQ ID NO:65), 433, VLMAMMSQI (SEQ ID NO:66), 445, TDCSLPMI (SEQ ID NO:67), 449, LPMIWAQKTNTPA (amino acids 3-15 of SEQ ID NO:68), 472, TFAGGVH⁶PAI (SEQ ID NO:69), 472, TFAGGVHP (amino acids 1-8 of SEQ ID NO:69), 481, IALREYRKKMDIPAKL (SEQ ID NO:70), 484, REYRKKMD (amino acids 4-11 of SEQ ID NO:70).

7¹⁸. (twice amended) The method of claim 12 wherein the peptide is labelled with a compound selected from the group consisting of dyes, fluorescent labels, chemiluminescent labels, enzymes, and radioactive labels.

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8 14. The method of claim 12 wherein the peptides are immobilized onto a substrate.

9 15. (amended) The method of claim 14 further comprising detecting autoantibodies in a patient sample by reacting the patient sample with the immobilized peptides.

10 16. (twice amended) The method of claim 15 further comprising predicting the prognosis of the patient based on the reactivity of the patient sample with different peptides.

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